

## WE CLAIM:

- Sub B1
1. A nucleotide sequence comprising, a regulatory region in operative association with a xylanase secretion sequence and a gene of interest, wherein at least one of the regulatory region, or gene of interest is not normally associated with the production of xylanase protein.
  2. The nucleotide sequence of claim 1, wherein the regulatory region is selected from the group consisting of *cbh1*, *cbh2*, *egl*, *eg2*, *eg3*, *eg5*, *xln1*, and *xln2*.
  - Sub B2
  - ~~3. The nucleotide sequence of claim 1, wherein the gene interest is selected from a gene encoding a protein selected from the group consisting of a pharmaceutical, nutraceutical, industrial, an animal feed, a food additive, and an enzyme.~~
  4. The nucleotide sequence of claim 1 further comprising a terminator sequence.
  - Sub B3
  - ~~5. The nucleotide sequence of claim 1 further comprising a marker gene.~~
  6. The nucleotide sequence of claim 1 further comprising an intervening sequence.
  7. A vector comprising the isolated nucleotide sequence of claim 1.
  8. A transformed filamentous fungi comprising the vector of claim 7.
  9. A transformed filamentous fungi comprising the nucleotide sequence of claim 1.
  - Sub B4
  - ~~10. The transformed filamentous fungi of claim 9, wherein the filamentous fungi is selected from the group consisting of *Trichoderma*, *Humicola*, *Fusarium*, *Aspergillus*, *Mycogone*, *Verticillium*, *Streptomyces*, *Colletotrichum*, *Neurospora*, *Botrytis*, *Pleurotus*, *Penicillium*, *Cephalosporium*, *Myrothecium*, *Papulospora*, *Achlya*, *Podospora*, *Endothia*, *Mucor*, *Cochilobolus*, *Tolypocladium*, *Pyricularia*, *Penicillium*, *Myceliophthora*, *Irpex*, *Stachybotrys*, *Scorpulariopsis*, *Chaetomium*, *Gilocladium*, *Cephalosporin* and *Acremonium*.~~
  11. The transformed filamentous fungi of claim 10, wherein the filamentous fungi is *Trichoderma*.
  12. The transformed filamentous fungi of claim 10, wherein the filamentous fungi is *Humicola*.

13. A method of producing a protein of interest within a filamentous fungi comprising the steps of:

- i) transforming the filamentous fungi with a nucleotide sequence comprising, a regulatory region in operative association with a xylanase secretion sequence and a gene of interest, wherein at least one of the regulatory region, or gene of interest is not normally associated with the production of xylanase protein;
- ii) growing the filamentous fungi, and
- iii) causing the fungi to produce the protein of interest.

14. A method of producing a protein of interest within a filamentous fungi comprising the steps of:

- i) transforming the filamentous fungi with the nucleic acid sequence of claim 6;
- ii) growing the filamentous fungi; and
- iii) causing the fungi to produce the protein of interest.

15. The method of claim 13, wherein, in the step of transforming, the xylanase secretion sequence is heterologous with respect to the filamentous fungi.

16. The method of claim 13, wherein, in the step of transforming, the xylanase secretion sequence is homologous with respect to the filamentous fungi.

17. The method of claim 14, wherein, in the step of transforming, the xylanase secretion sequence is heterologous with respect to the filamentous fungi.

18. The method of claim 14, wherein, in the step of transforming, the xylanase secretion sequence is homologous with respect to the filamentous fungi.

19. The method of claim 13, wherein the step of causing the fungi to produce, further comprises purifying the protein of interest.

20. The method of claim 14, wherein the step of causing the fungi to produce, further comprises purifying the protein of interest.

21. The method of claim 14 wherein the step of causing the fungi to produce the protein of interest, further comprises removing the amino acid sequence encoded by the intervening sequence from the protein of interest.

22. A protein produced by the method of claim 14.
23. A protein produced by the method of claim 20.
24. The nucleotide sequence of claim 3, wherein the protein is selected from a group consisting of  $\beta$ -glucosidase, cellulase, hemicellulase, a lignin degrading enzyme, pectinase, protease, and peroxidase.
25. A vector comprising the isolated nucleotide sequence of claim 24.
26. A transformed filamentous fungi comprising the vector of claim 25.
27. A transformed filamentous fungi comprising the nucleotide sequence of claim 24.
28. A method of producing a protein of interest selected from a group consisting of  $\beta$ -glucosidase, cellulase, hemicellulase, a lignin degrading enzyme, pectinase, protease, and peroxidase within a filamentous fungi comprising the steps of:
- i) transforming the filamentous fungi with the vector of claim 25;
  - ii) growing the filamentous fungi; and
  - iii) causing the fungi to produce the protein.
29. A method of producing a protein of interest selected from a group consisting of  $\beta$ -glucosidase, cellulase, hemicellulase, a lignin degrading enzyme, pectinase, protease, and peroxidase within a filamentous fungi comprising the steps of:
- i) transforming the filamentous fungi with the nucleotide sequence of claim 24;
  - ii) growing the filamentous fungi; and
  - iii) causing the fungi to produce the protein.
30. An expression system for producing a protein of interest comprising, a filamentous fungi containing a nucleotide sequence comprising a regulatory region in operative association with a xylanase secretion sequence and a gene of interest encoding the protein of interest, wherein at least one of the regulatory region, or gene of interest is not normally associated with the production of xylanase protein.

add  
BS